

What is claimed is:

1. A liquid jetting apparatus comprising
a head having a nozzle, adapted to receive jetting data corresponding to one scanning movement in a main scanning direction,
a head-scanning mechanism for moving the head in the main scanning direction after the head has received the jetting data,
a recovering unit for recovering a suitable viscosity of liquid in the nozzle from an increased viscosity thereof,
a measuring timer for measuring at least a part of a time since a previous operation of the recovering unit has been completed, and
a controller for controlling the recovering unit, based on the time measured by the measuring timer.
2. A liquid jetting apparatus according to claim 1, wherein:
the measuring timer is adapted to measure a time since the previous operation of the recovering unit has been completed until the head completes receiving the jetting data.
3. A liquid jetting apparatus according to claim 1, wherein:
the head-scanning mechanism is adapted to move the head from a waiting position in the main scanning direction after the head has received the jetting data, and to move back the head to the waiting position again, and
the measuring timer is adapted to measure a time since the head has been moved back to the waiting position again after being moved in the main scanning direction until the head completes receiving the jetting data.
4. A liquid jetting apparatus according to claim 1, wherein:
the controller is adapted to control the recovering unit, based on the jetting data.
5. A liquid jetting apparatus according to claim 4, wherein:
the head-scanning mechanism is adapted not to move the head to an area over a position to which a last drop of the liquid

09689761-101300

is jetted in the one scanning movement in the main scanning direction, and

the controller is adapted to control the recovering unit, dependently on a distance for which the head is moved in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

6. A liquid jetting apparatus according to claim 4, wherein:
the head-scanning mechanism is adapted not to move the head to an area over a position to which a last drop of the liquid is jetted in the one scanning movement in the main scanning direction, and

the controller is adapted to control the recovering unit, dependently on a distance for which the head has been moved in a previous scanning movement in the main scanning direction.

7. A liquid jetting apparatus according to claim 4, wherein:
the controller is adapted to control the recovering unit, dependently on a distance for which the head is moved until a first drop of the liquid is jetted in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

8. A liquid jetting apparatus according to claim 4, wherein:
the head has a plurality of nozzles,
the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and

the controller is adapted to control the recovering unit, dependently on respective distances for which the head is moved until respective first drops of the liquid are jetted from the respective nozzles in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

9. A liquid jetting apparatus according to claim 4, wherein:
the controller is adapted to control the recovering unit,

09689761 101300

dependently on a proportion of the liquid jetted in a previous scanning movement in the main scanning direction.

10. A liquid jetting apparatus according to claim 4, wherein:
the head has a plurality of nozzles,
the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and
the controller is adapted to control the recovering unit, dependently on respective proportions of the liquid jetted from the respective nozzles in a previous scanning movement in the main scanning direction.

11. A liquid jetting apparatus according to claim 4, wherein:
the controller is adapted to control the recovering unit, dependently on a proportion of the liquid jetted in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

12. A liquid jetting apparatus according to claim 4, wherein:
the head has a plurality of nozzles,
the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and
the controller is adapted to control the recovering unit, dependently on respective proportions of the liquid jetted from the respective nozzles in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

13. A liquid jetting apparatus according to claim 1, wherein:
the head has a plurality of nozzles in which a plurality of kinds of liquid are used, respectively,
the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and
the controller is adapted to control the recovering unit,

09689761.101300

based on characteristics of the respective kinds of liquid used in the respective nozzles.

14. A liquid jetting apparatus according to claim 1, further comprising:

a sensor for detecting a state of environment where the liquid jetting apparatus is used,
wherein

the controller is adapted to control the recovering unit, based on an output from the sensor.

15. A liquid jetting apparatus according to claim 1, further comprising:

a capping unit capable of being moved between a position away from the head and a position for coming in contact with the head in order to seal the nozzle,
wherein

the controller is adapted to bring the capping unit in contact with the head, based on the time measured by the measuring timer.

16. A liquid jetting apparatus according to claim 1, wherein:
the recovering unit is a minutely-vibrating unit for causing the liquid in the nozzle to minutely vibrate.

17. A liquid jetting apparatus according to claim 16, wherein:
the recovering unit is a flushing unit for causing the liquid in the nozzle to jet out from the nozzle outside an objective jetting area.

18. A controlling unit for controlling a liquid jetting apparatus including: a head having a nozzle, adapted to receive jetting data corresponding to one scanning movement in a main scanning direction; a head-scanning mechanism for moving the head in the main scanning direction after the head has received the jetting data; a recovering unit for recovering a suitable viscosity of liquid in the nozzle from an increased viscosity

09689761.101300

thereof; and a measuring timer for measuring at least a part of a time since a previous operation of the recovering unit has been completed;

wherein

the controlling unit is adapted to control the recovering unit, based on the time measured by the measuring timer.

19. A controlling unit according to claim 18, wherein:

the measuring timer is adapted to measure a time since the previous operation of the recovering unit has been completed until the head completes receiving the jetting data.

20. A controlling unit according to claim 18, wherein:

the head-scanning mechanism is adapted to move the head from a waiting position in the main scanning direction after the head has received the jetting data, and to move back the head to the waiting position again, and

the measuring timer is adapted to measure a time since the head has been moved back to the waiting position again after being moved in the main scanning direction until the head completes receiving the jetting data.

21. A controlling unit according to claim 18, wherein:

the controlling unit is adapted to control the recovering unit, based on the jetting data.

22. A controlling unit according to claim 21, wherein:

the head-scanning mechanism is adapted not to move the head to an area over a position to which a last drop of the liquid is jetted in the one scanning movement in the main scanning direction, and

the controlling unit is adapted to control the recovering unit, dependently on a distance for which the head is moved in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

23. A controlling unit according to claim 21, wherein:

09689761 " 101300

the head-scanning mechanism is adapted not to move the head to an area over a position to which a last drop of the liquid is jetted in the one scanning movement in the main scanning direction, and

the controlling unit is adapted to control the recovering unit, dependently on a distance for which the head has been moved in a previous scanning movement in the main scanning direction.

24. A controlling unit according to claim 21, wherein:

the controlling unit is adapted to control the recovering unit, dependently on a distance for which the head is moved until a first drop of the liquid is jetted in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

25. A controlling unit according to claim 21, wherein:

the head has a plurality of nozzles,

the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and

the controlling unit is adapted to control the recovering unit, dependently on respective distances for which the head is moved until respective first drops of the liquid are jetted from the respective nozzles in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

26. A controlling unit according to claim 21, wherein:

the controlling unit is adapted to control the recovering unit, dependently on a proportion of the liquid jetted in a previous scanning movement in the main scanning direction.

27. A controlling unit according to claim 21, wherein:

the head has a plurality of nozzles,

the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and

the controlling unit is adapted to control the recovering unit, dependently on respective proportions of the liquid jetted from the respective nozzles in a previous scanning movement in the main scanning direction.

28. A controlling unit according to claim 21, wherein:

the controller is adapted to control the recovering unit, dependently on a proportion of the liquid jetted in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

29. A controlling unit according to claim 21, wherein:

the head has a plurality of nozzles,

the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and

the controlling unit is adapted to control the recovering unit, dependently on respective proportions of the liquid jetted from the respective nozzles in a next scanning movement in the main scanning direction, based on the jetting data corresponding to the next scanning movement.

30. A controlling unit according to claim 18, wherein:

the head has a plurality of nozzles in which a plurality of kinds of liquid are used, respectively,

the recovering unit is adapted to recover a suitable viscosity of liquid in each of the plurality of nozzles from an increased viscosity thereof, respectively, and

the controlling unit is adapted to control the recovering unit, based on characteristics of the respective kinds of liquid used in the respective nozzles.

31. A controlling unit according to claim 18, wherein:

the liquid jetting apparatus further includes a sensor for detecting a state of environment where the liquid jetting apparatus is used, and

the controlling unit is adapted to control the recovering

09689761.101300

unit, based on an output from the sensor.

32. A controlling unit according to claim 18, wherein:

the liquid jetting apparatus further includes a capping unit capable of being moved between a position away from the head and a position for coming in contact with the head in order to seal the nozzle, and

the controlling unit is adapted to bring the capping unit in contact with the head, based on the time measured by the measuring timer.

33. A storage unit capable of being read by a computer, storing a program for materializing a controlling unit for controlling a liquid jetting apparatus including; a head having a nozzle, adapted to receive jetting data corresponding to one scanning movement in a main scanning direction; a head-scanning mechanism for moving the head in the main scanning direction after the head has received the jetting data; a recovering unit for recovering a suitable viscosity of liquid in the nozzle from an increased viscosity thereof; and a measuring timer for measuring at least a part of a time since a previous operation of the recovering unit has been completed;

wherein the controlling unit is adapted to control the recovering unit, based on the time measured by the measuring timer.

34. A storage unit capable of being read by a computer, storing a program including a command for controlling a second program executed by a computer system including a computer, the program is executed by the computer system to control the second program to materialize a controlling unit for controlling a liquid jetting apparatus including; a head having a nozzle, adapted to receive jetting data corresponding to one scanning movement in a main scanning direction; a head-scanning mechanism for moving the head in the main scanning direction after the head has received the jetting data; a recovering unit for recovering a suitable viscosity of liquid in the nozzle from an increased viscosity thereof; and a measuring timer for measuring at least a part of

09689761 101300

a time since a previous operation of the recovering unit has been completed;

wherein the controlling unit is adapted to control the recovering unit, based on the time measured by the measuring timer.

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